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EXAMINER	
KEEFER, MICHAEL E	

ART UNIT	PAPER NUMBER
2154	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/646,851	LIANG ET AL.	
	Examiner	Art Unit	
	Michael E. Keefer	2154	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 September 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *7-11,19-23,27-36 and 40-49* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *7-11,19-23,27-36 and 40-49* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 September 2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is responsive to the Amendment filed 9/21/2007.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 7-11 and 19-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 8 and 20 state that the replicating and writing take place concurrently but Claims 8 and 20 also state that the writing is paused after a commit operation, and then during that pause, the replicating is initiated by the client. These two limitations are contradictory, as if the operations are not taking place at the same time, then they cannot be concurrent; especially as a commit operation comes at the -end- of an attempt to write, after which writing is completed by the client.

Claims 7, 9-11, 19, and 21-23 are rejected for the same, as they depend from claims 8 and 20.

Claim Rejections - 35 USC § 102

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 27, 30, and 34-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Chen et al. (US 7076509), hereafter Chen.

Regarding **claim 27**, Chen (US 7076509) discloses:

A network file server (Fig. 6, 600) comprising:

data storage; (Fig. 6, Disks connected to Disk driver 650)

an interface for coupling the data storage to a data network; (Fig. 6, Media access 610) and

at least one processor programmed for permitting clients in the data network to access the data storage in accordance with a plurality of access protocols; (inherent, as multiple protocols are disclosed (Col. 9 lines 12-18, therefore a processor must be present and programmed to allow clients to use those protocols)

the data storage containing at least one file for storing file attributes and for storing metadata defining a virtual direct access storage device and for storing data of the virtual direct access storage device; (Fig. 6, File system 665 and/or VDISK module 670)

the access protocols including at least one block level access protocol for access to the virtual direct access storage device by accessing the metadata and data of the virtual direct access storage device (Fig. 6, FC 630, iSCSI 628); and

the access protocols including at least one file access protocol for accessing said at least one file. (Fig. 6, NFS 620, CIFS 622)

wherein the metadata includes attributes of the virtual direct access storage device, and the attributes of the virtual direct access storage device and the data of the virtual direct access storage device are stored

together in a single file. (Col. 10, lines 43-47 states that a vdisk is a special file (singular) type.)

wherein the metadata includes attributes of the virtual direct access storage device, and the attributes of the virtual direct access storage device and the data of the virtual direct access storage device are stored in separate files in a common file system. (Col 10 lines 47-56 describe that an embodiment of a vdisk may have one file (stream) containing metadata and other files in the file system (streams) would have data.)

wherein the attributes define an internal organization of the virtual direct access storage device and those attributes are stored in the single file. (Fig. 5 of fully incorporated application 10/216453 (now US 7107385) shows that the metadata does give an internal organization of the VLUN, showing where particular data is actually stored on a physical device.)

Regarding **claim 30 as applied to claim 24**, Chen (US 7076509) discloses:

which includes a snapshot copy facility for copying the data of the virtual direct access storage device concurrent with a client using the block level access protocol over the network to write data to the virtual direct access storage device. (Col. 13 lines 43-46 disclose a snapshot system)

Regarding **claim 34 as applied to claim 24**, Chen (US 7076509) discloses:

wherein the network is an IP network, and the block level access protocol is SCSI. (Col 9, lines 56-59, note that iSCSI, an implementation of a block level access protocol (SCSI) over TCP (TCP/IP, or an IP network)

Regarding **claims 35-36 as applied to claim 24**, Chen (US 7076509) discloses:

wherein the file access protocol is NFS. (Col. 9 lines 15-18, state that a client using the UNIX (or Linux) operating system may use the NFS protocol to communicate.)

wherein the file access protocol is CIFS. (Col. 9 lines 12-15, state that clients using the Windows operating system may communicate using CIFS)

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 7-11 and 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US 7076509), hereafter Chen in view of Baweja et al. (US 6564229), hereafter Baweja, and further in view of Lefebvre et al. (US 2002/0010665), hereafter Lefebvre.

Regarding **claim 1**, Chen (US 7076509) discloses:

In a data processing network including a client (Fig. 5, Clients 560a and/or 506b) and a file server (Fig. 5, Multi-protocol Storage Appliance 500), a method of access to a storage object (vdisk or LUN, Col 10 line 1) in the file server, said method comprising: the client using a block level access protocol (Col 9 Lines 40-42, "clients 560 generally use block-based access protocols") over the network (Fig. 5, 585 or 565) to access the storage object; and the file server accessing the storage object by accessing a file (Col 10, lines 56-60, the file server accesses the vdisk to access the data on the volume) containing data of the storage object.

which includes the file server copying the file concurrent with the client using the block level access protocol over the network to write data to the storage object (Col. 13, lines 43-49 describe the inherent snapshot capabilities of Chen's invention, and point to incorporated reference Hitz et al. (US 5,819,292) for more explanation: Col. 1 lines 26-32 of Hitz et al. describe that backups occur on servers with "active file systems" meaning that writing or reading activity can be simultaneous with any kind of copying.)

wherein the network is an IP network (Fig. 5, IP network 565), the client uses the block level protocol over a first TCP/IP connection over the network to access the storage object (iSCSI)

Regarding **claim 9 as applied to claim 8**, Chen (US 7076509) discloses:

which includes the file server also providing access to the storage object over the network by means of a file access protocol over the network, the file

access protocol accessing the file containing the data of the storage object (Col 11, lines 15-20 it is disclosed that Chen is operable with both block-based and file-based protocols, i.e. "providing an integrated NAS and SAN appliance", as NAS appliances use file-based protocols.).

Regarding **claims 10-11 as applied to claims 8 and 9**, Chen (US 7076509) discloses:

wherein the client uses a UNIX or Linux operating system, and the file access protocol is NFS. (Col. 9 lines 15-18, state that a client using the UNIX (or Linux) operating system may use the NFS protocol to communicate.)

wherein the client uses a Windows operating system, and the file access protocol is CIFS. (Col. 9 lines 12-15, state that clients using the Windows operating system may communicate using CIFS)

Regarding **claim 20**, Chen (US 7076509) discloses:

In a data processing network including a client (Clients 560a and/or 506b) and a file server (Multi-protocol Storage Appliance 500), a method of access to a virtual direct access storage device (Col 12 Lines 55-60) in the file server, attributes and data of the virtual direct access storage device (Col 10, lines 56-60, the file server accesses the vdisk to access the data on the volume) being stored in at least one file in the file server (Col. 10, lines 43-47 states that a vdisk is a special file type.), said method comprising:

the client using a block level access protocol (Col 9 Lines 40-42) over the network to access the virtual direct access storage device in the file server, the

file server responding to commands in accordance with the block level access protocol for access to the virtual direct access storage device by accessing the attributes and data of the virtual direct access storage device; and

the file server providing access over the network to the virtual block storage device in accordance with a file access protocol by accessing said at least one file in the file server. (Col. 9 lines 12-18)

Regarding **claim 17 as applied to claim 20**, Chen (US 7076509) discloses: which includes the file server copying the data of the virtual direct access storage device concurrent with the client using the block level access protocol over the network to write data to the virtual direct access storage device. (Col. 13, lines 43-49 describe the inherent snapshot capabilities of Chen's invention, and point to incorporated reference Hitz et al. (US 5,819,292) for more explanation: Col. 1 lines 26-32 of Hitz et al. describe that backups occur on servers with "active file systems" meaning that writing or reading activity can be simultaneous with any kind of copying.)

Regarding **claim 21 as applied to claim 20**, Chen (US 7076509) discloses:

wherein the network is an IP network, and the block level access protocol is SCSI. (Col 9, lines 56-59, note that iSCSI, an implementation of a block level access protocol (SCSI) over TCP (TCP/IP, or an IP network)

Regarding **claims 22-23 as applied to claim 20**, Chen (US 7076509) discloses:

wherein the client uses a UNIX or Linux operating system, and the file access protocol is NFS. (Col. 9 lines 15-18, state that a client using the UNIX (or Linux) operating system may use the NFS protocol to communicate.)

wherein the client uses a Windows operating system, and the file access protocol is CIFS. (Col. 9 lines 12-15, state that clients using the Windows operating system may communicate using CIFS)

Chen (US 7076509) discloses all the limitations of claims 7-11 and 19-23 except for:

the step of the client pausing the step of writing of data to the storage object after a commit operation, and during the pause, the client performing the step of initiating the copying of the file

The general concept of pausing data writing and during the pause initiating the copying of the file is well known in the art as taught by Baweja. (Abstract, a user can pause a data copy operation (i.e. writing), and then can resume copying the file (i.e. initiating copying of the file))

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Chen with the general concept of pausing data writing in relation to a commit operation then initiating copying of data as taught by Baweja in order to free system resources to perform other operations (Baweja, Abstract, last sentence).

Chen and Baweja teach all the limitations of claims 7-11 and 19-23 except for:

the client initiates the step of the copying of the file by sending a command over a second TCP/IP connection;

the client performing the step of initiating the copying of the file by sending the command over the second TCP/IP connection.

wherein the first TCP/IP connection is concurrent with the second TCP/IP connection.

The general concept of a client requesting a replication of snapshot data over a TCP connection is well known in the art as taught by Lefebvre. (See [0086] which states that Snapshot replication can be requested by a client. It is inherent that this action would take place over a different TCP socket than that used by iSCSI as they are different protocols which would use different TCP sockets to perform their tasks.)

It would have been obvious to one of ordinary skill in the art at the time of the invention to Chen and Baweja with the general concept of a client requesting a replication of snapshot data over a TCP connection as taught by Lefebvre in order to back the data snapshots more securely backed up off-site.

5. Claims 28-29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US 7076509 B1) as applied to claims 27 above, and further in view of Busser (US 2002/0095616 A1) and in further view of Hashemi (US 6934804).

Regarding **claims 28-29**,

Chen et al. (US 7076509 B1) discloses all the limitations of claim 28 except for that the attributes of the device specify an internal organization that includes a RAID level.

The general concept of storing RAID level information in metadata files is well known in the art as taught by Busser ([0029] "The disk

metadata 100 contains data that the controller uses to assist in the operation and management of the RAID system.").

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Chen et al. (US 7076509 B1) with the general concept of storing RAID level information in metadata files in order to make information about the RAID level more available to users of the file system.

Chen, Chen, and Busser teach all the limitations of claims 28-29 except that the internal organization described includes striping.

The general concept of including striping data as part of RAID data is well known in the art as taught by Hashemi. (Col. 11, lines 3-4 "RAID attributes like those of striping or redundancy")

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Chen, Chen, and Busser with the general concept of including striping data as part of RAID data as taught by Hashemi in order to support all kinds of RAID configurations.

6. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US 7076509 B1) as applied to claim 27 above, and further in view of Chen et al. (US 7010553 B2).

Regarding **claim 33**,

Chen et al. (US 7076509 B1) discloses all the limitations of claim 33 except for the network file server including an IP replication facility.

The general concept of backing files up over a network is well known in the art as taught by Chen et al. (US 7010553 B2) (Col. 3 lines 14-20 "a mirror is established and stored in a remote site").

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Chen et al. (US 7076509 B1) with the general concept of backing files up over a network as taught by Chen et al. (US 7010553 B2) in order to "improve reliability and facilitate disaster recovery." ('553 Col. 3 lines 14-15)

7. Claims 40 and 45-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US 7076509 B1) and Chen et al. (US 7010553 B2).

Regarding claims **40 and 45-48**, Chen et al. (US 7076509 B1) discloses:

A network file server (Fig. 6, 600) comprising:

data storage; (Disks connected to Disk driver 650)

an interface for coupling the data storage to a data network; (Media access 610) and

at least one processor programmed for permitting clients in the data network to access the data storage in accordance with a plurality of access protocols; (inherent)

the data storage containing at least one file for storing file attributes and for storing metadata defining a virtual direct access storage device and for storing data of the virtual direct access storage device; (File system 665 and/or VDISK module 670)

the access protocols including at least one block level access protocol for access to the virtual direct access storage device by accessing the metadata and data of the virtual direct access storage device (FC 630, iSCSI 628); and

the access protocols including at least one file access protocol for accessing said at least one file. (NFS 620, CIFS 622)

wherein the metadata includes attributes of the virtual direct access storage device, and the attributes of the virtual direct access storage device and the data of the virtual direct access storage device are stored together in a single file. (Col. 10, lines 43-47 states that a vdisk is a special file (singular) type.)

wherein the metadata includes attributes of the virtual direct access storage device, and the attributes of the virtual direct access storage device and the data of the virtual direct access storage device are stored in separate files in a common file system. (Col 10 lines 47-56 describe that an embodiment of a vdisk may have one file (stream) containing metadata and other files in the file system (streams) would have data.)

wherein the metadata includes attributes of the virtual direct access storage device and the attributes of the virtual direct access storage device specify an internal organization of the virtual direct access storage device. (See Fig. 7, which shows the various ways metadata, is stored in a file to describe the vdisk.)

wherein the at least one file access protocol includes NFS. (Col. 9 lines 12-18)

wherein the at least one file access protocol includes CIFS. (Col. 9 lines 12-18)

wherein the block-level access protocol includes the iSCSI protocol. (Col 9, lines 56-59)

wherein the block-level access protocol includes the SCSI protocol. (Col 9, lines 40-42)

which includes a snapshot copy facility for creating snapshot copies of said at least one file. (Col. 13 lines 43-46 disclose a snapshot system)

wherein the attributes define an internal organization of the virtual direct access storage device and those attributes are stored in the single file. (Fig. 5 of fully incorporated application 10/216453 (now US 7107385) shows that the metadata does give an internal organization of the VLUN, showing where particular data is actually stored on a physical device.)

Chen et al. (US 7076509 B1) discloses all the limitations of claims 37-40 and 45-48 except for a facility for remote replication of at least one file over an IP network and that the remote replication facility is used to replicate snapshots.

The general concept of a facility for backing files up over a network is well known in the art as taught by Chen et al. (US 7010553 B2) (Col. 3 lines 14-20 "a mirror is established and stored in a remote site" In addition, '553 teaches that the file backed up maybe a snapshot file in Col. 3 lines 25-30).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Chen et al. (US 7076509 B1) with the general concept of backing files up over a network as taught by Chen et al. (US 7010553 B2) in order to "improve reliability and facilitate disaster recovery." ('553 Col. 3 lines 14-15)

8. Claims 41-42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US 7076509 B1) and Chen et al. (US 7010553 B2) as applied to claims 40 above, and further in view of Busser and in further view of Hashemi (US 6934804).

Regarding **claims 41-42**,

Chen et al. (US 7076509 B1) and Chen et al. (US 7010553 B2) disclose all the limitations of claim 28 except for that the attributes of the device specify an internal organization that includes a RAID level.

The general concept of storing RAID level information in metadata files is well known in the art as taught by Busser ([0029] "The disk metadata 100 contains data that the controller uses to assist in the operation and management of the RAID system.").

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Chen et al. (US 7076509 B1) and Chen et al. (US 7010553 B2) with the general concept of storing RAID level information in metadata files in order to make information about the RAID level more available to users of the file system.

Chen, Chen, and Busser teach all the limitations of claims 41-42 except that the internal organization described includes striping.

The general concept of including striping data as part of RAID data is well known in the art as taught by Hashemi. (Col. 11, lines 3-4 "RAID attributes like those of striping or redundancy")

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Chen, Chen, and Busser with the general concept of including striping data as part of RAID data as taught by Hashemi in order to support all kinds of RAID configurations.

9. Claims 31-32, 43-44 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US 7076509 B1) and Chen et al. (US 7010553 B2) as applied to claims 25, 30, and 40 above, and further in view of Bolosky.

Regarding **claims 31-32, 43-44 and 49**,

Chen et al. (US 7076509 B1) and Chen et al. (US 7010553 B2) teach all the limitations of claims 43-44 and 49 except for the initiation of the replication being done by the client over a second concurrent TCP/IP connection.

The general concept of a client initiating a command over a separate concurrent TCP/IP connection is well known in the art as taught in VERITAS (Abstract, a data link for control information, and a data link for data transfer are taught)

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Chen et al. (US 7076509 B1) and Chen et al. (US 7010553 B2) with the general concept of a remote client issuing a command over a separate TCP/IP connection as taught by Bolosky in order to facilitate efficient and useful communications between clients and servers. (Bolosky, [0002] last sentence).

Response to Arguments

10. Applicant's arguments with respect to claims 7-11 and 19-23 have been considered but are moot in view of the new ground(s) of rejection.

11. Applicant's arguments filed 9/21/2007 have been fully considered but they are not persuasive. Applicant argues that the amendments to claims 27 and 40 overcome the rejections involving Chen, Chen, Rajan, and Busser.

Applicant's amendment of claims 27 and 40 state that the metadata (i.e. the attributes of the VDASD) specify a mapping of the data of the VDASD from the single file to the data storage. Thus, the metadata instructs where the data in the VDASD is actually stored on the physical data storage. In the Rajan reference (US 7107385), it is clear that in order for the file system to work as disclosed, the metadata contained in Fig. 5 must include where on the physical disks a specific set of data has been written, because the process of choosing what physical disks are used in the vdisk is automated. (See Col. 10, lines 51-67 - Col. 11 lines 1-17 of Rajan). Since the server itself is choosing what parts of what physical disks make up each virtual disk, it is inherent that this data would be stored in the metadata in the inodes. Additionally,

motivation for modifying Chen with the concepts of describing RAID levels and striping levels (which are arguably synonymous when given their broadest reasonable interpretation, as striping is defined by a RAID level) exists so as to allow the file operating system described in Rajan to only use physical disks that have the appropriate reliability when allocating more disk space for the vdisk as described in Col. 15 lines 1-9. (In other words, if a vdisk is created on a disk(s) that is/are RAID 4, the file operating system would not choose blocks from a disk that is RAID 6 to resize the vdisk with.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael E. Keefer whose telephone number is (571) 270-1591. The examiner can normally be reached on Monday through Friday 9am-5pm.

NATHAN FLYNN
SUPERVISORY PATENT EXAMINER

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SUPERVISORY PATENT EXAMINER

MEK 12/5/2007